

CLAIMS

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is as follows:

1 1. A patient lifting apparatus, comprising:
2 an upright member;
3 a boom mechanically associated with said upright member for conveying a
4 patient from one location to another; and
5 a support structure for attaching said upright member to a bed frame, said
6 support structure being arranged to transfer torque from the lifting
7 apparatus to the bed frame during operation.

1 2. The patient lifting apparatus according to claim 1, wherein said support
2 structure comprises a lower attachment point that fastens to a leg of the bed frame.

1 3. The patient lifting apparatus according to claim 2, wherein said support
2 structure comprises an upper attachment point that fastens to a headboard of the bed
3 frame.

1 4. The patient lifting apparatus according to claim 2, wherein said lower
2 attachment point comprises a plurality of threaded fasteners arranged to clamp the
3 support structure to the bed frame leg.

1 5. The patient lifting apparatus according to claim 1, wherein said support
2 structure comprises a lower support bar that extends across the bed frame and has
3 each of its ends fastened to a respective leg of the bed frame.

1 6. The patient lifting apparatus according to claim 5, further comprising a
2 telescoping foot member that extends from the lower support bar and is movable
3 between a stored position and an extended position for stabilizing the apparatus
4 during use.

1 7. The patient lifting apparatus according to claim 5, wherein said support
2 structure further comprises an upper support bar that extends across the bed frame and
3 has each of its ends fastened to a respective side of the headboard of the bed frame.

1 8. The patient lifting apparatus according to claim 7, wherein said upper
2 support bar comprises a pair of clamps positioned at respective ends thereof for
3 engaging the respective sides of the headboard of the bed frame.

1 9. The patient lifting apparatus according to claim 1, wherein said support
2 structure comprises an upper bearing that allows smooth rotation of the upright
3 member relative to the bed frame, and a lower bearing that transfers the vertical force
4 of a patient's weight into the bed frame.

1 10. The patient lifting apparatus according to claim 1, further comprising a
2 support arm mechanically associated with the upright member that rotates along with
3 the boom and engages a floor to transfer the vertical force of a patient's weight into
4 the floor.

1 11. The patient lifting apparatus according to claim 1, wherein said boom is
2 pivotally mounted to said upright member for rotation about a generally horizontal
3 axis, and further comprising a linear actuator connected between said upright member
4 and said boom for raising and lowering said boom.

1 12. The patient lifting apparatus according to claim 1, wherein said upright
2 member is pivotal about a vertical axis, and further comprising an actuator for rotating
3 the upright member about said vertical axis to swing said boom in a side-to-side
4 movement.

1 13. The patient lifting apparatus according to claim 1, wherein said boom is
2 rigidly mounted to said upright member, and further comprising a winch having a
3 cable that hangs from a free end of said boom for lifting a patient.

1 14. In combination, a bed frame and a patient lifting apparatus, said bed frame
2 comprising a plurality of legs and a headboard, said patient lifting apparatus
3 comprising:
4 an upright member;
5 a boom mechanically associated with said upright member for conveying a
6 patient from one location to another; and
7 a support structure having an upper attachment system that secures the upright
8 member to the headboard, and a lower attachment system that secures the
9 upright member to at least one of the legs, said support structure being
10 arranged to transfer torque from the lifting apparatus into the bed frame
11 during operation.

1 15. The patient lifting apparatus according to claim 14, wherein said lower
2 attachment system of the support structure comprises a lower support bar that extends
3 across the bed frame and has each of its ends fastened to a respective leg of the bed
4 frame.

1 16. The patient lifting apparatus according to claim 15, further comprising a
2 telescoping foot member that extends from the lower support bar and is movable
3 between a stored position and an extended position for stabilizing the apparatus
4 during use.

1 17. The patient lifting apparatus according to claim 14, wherein said upper
2 attachment system of the support structure comprises an upper support bar that
3 extends across the bed frame and has each of its ends fastened to a respective side of
4 the headboard of the bed frame.

1 18. The patient lifting apparatus according to claim 14, wherein said upper
2 attachment system comprises an upper bearing that allows smooth rotation of the
3 upright member relative to the bed frame, and said lower attachment system
4 comprises a lower bearing that transfers the vertical force of a patient's weight into the
5 bed frame.

1 19. The patient lifting apparatus according to claim 14, further comprising a
2 support arm mechanically associated with the upright member that rotates along with
3 the boom about a generally vertical axis and engages a floor on which the bed is
4 supported to transfer the vertical force of a patient's weight into the floor via the
5 support arm rather than via the bed frame.

1 20. A patient lifting apparatus, comprising:
2 an upright member having upper and lower ends, said upright member being
3 pivotal about a vertical axis;
4 a boom means mechanically associated with said upright member for lifting
5 and conveying a patient from one location to another; and
6 a support means for attaching said upright member to a bed frame, said
7 support means being arranged to transfer torque from the upright member
8 into the bed frame during operation.